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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/550,210	09/21/2005	Michael Peszynski	US030074	1229

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EXAMINER	
DIVERSE, PIERRE P	
ART UNIT	**PAPER NUMBER**
2624	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/550,210	PESZYNSKI ET AL.	
	Examiner	Art Unit	
	PIERRE DIVERSE	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 September 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *21 September 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *09/21/2005*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1 – 20 are pending in this application.

2. Acknowledgement is made of applicant's preliminary amendment filed on 09/21/2005.

Priority

3. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

4. The information disclosure statement (IDS) submitted on 09/21//2005 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Double Patenting

5. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to

be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

6. Claims 1, 16, 19 -20 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 7 and 17 of U.S. Patent No. 7,270,634. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims in the instant application are broader in every aspect than the patented claims and are therefore an obvious variant. The claims in the instant application are generic to all that is recited in claims 7 and 17 of patent 7,270,634.

Instant Application 10550210	Reference Patent 7,270,634
1. A method of ultrasonically displaying an invasive medical device and the volumetric region of a body in which it is located comprising: scanning the volumetric region with beams transmitted by an ultrasonic array transducer; receiving echo signals from the volumetric region and from an invasive medical device located in the region; processing echo signals to produce a wide field of view of the volumetric region; processing echo signals to produce a detailed view of the portion of the volumetric region in which the invasive medical device is located; and displaying both the wide field of view of the volumetric region and the detailed view of the portion of the volumetric region in which the invasive medical device is located on an image display.	7. A method of ultrasonically guiding the placement or observing the operation of an invasive medical device comprising: transmitting ultrasonic beams over a volumetric region which includes the location of an invasive medical device in a sub-volume of the volumetric region; detecting the location of the sub-volume; controlling the beam density of the ultrasonic beams transmitted in the volumetric region in response to the detecting to be relatively high in the sub-volume in the vicinity of the invasive medical device, and to be relatively low at distances of the volumetric region removed from the sub-volume; receiving echo signals from the volumetric region and the sub-volume in response to the transmitted beams; processing the received echoes to produce a three dimensional ultrasonic image of the volumetric region and the invasive medical device; and displaying the three dimensional ultrasonic image of the volumetric surgical region and the subvolume including the invasive medical device.
16. An ultrasonic surgical guidance imaging system	17. An ultrasonic surgical guidance imaging system

which acts to guide the placement or observe the operation of an invasive medical device comprising: an ultrasonic probe including an array transducer which steers ultrasonic beams over a volumetric surgical region which includes an invasive medical device; a transmit beamformer coupled to the array transducer which acts to control the spatial beam density of the beams transmitted by the array transducer in the volumetric region; a receive beamformer coupled to the array transducer and responsive to echo signals from array elements for the production of received scanlines in the vicinity of the invasive medical device and in the volumetric region at locations removed from the invasive medical device location; an image processor responsive to the received scanlines for producing a wide field of view of the volumetric surgical region and a detailed view of the invasive medical device; and a display coupled to the image processor which displays both the wide field of view of the volumetric surgical region and the detailed view of the invasive medical device. 19. The ultrasonic surgical guidance imaging system of Claim 16, wherein the receive beamformer comprises a multiline receive beamformer. 20. The ultrasonic surgical guidance imaging system of Claim 19, wherein the multiline receive beamformer is operated for the production of a different number of received multilines for each transmit beam in the vicinity of the invasive medical device than that produced in the volumetric region at locations removed from the invasive medical device location.	which acts to guide the placement or observe the operation of an invasive medical device comprising: an ultrasonic probe including an array transducer which steers ultrasonic beams over a volumetric surgical region for image guidance of the placement or operation of an invasive medical device; a transmit beamformer coupled to the array transducer which acts to control the spatial beam density of the beams transmitted by the array transducer in the volumetric region; a detector responsive to echo signals from the array transducer which acts to detect the location of the invasive medical device in the volumetric region; a multiline receive beamformer coupled to the array transducer and responsive to the detection of the location of the invasive medical device and to echo signals from array elements for the production of different orders of received multilines in the vicinity of the invasive medical device and in the volumetric region at locations removed from the invasive medical device location; an image processor responsive to the received multilines for producing a three dimensional ultrasonic image of the volumetric surgical region and the invasive medical device; and a display coupled to the image processor which displays the three dimensional ultrasonic image of the volumetric surgical region and the invasive medical device.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1 – 2, 6 and 11 – 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Hayakawa, U.S. Patent No. 6,221,016 published on Apr 24, 2001.

9. Regarding claim 1, Hayakawa discloses 'a method of ultrasonically displaying an invasive medical device and the volumetric region of a body in which it is located' (see)

'scanning the volumetric region with beams transmitted by an ultrasonic array transducer' (see column 11, lines 15 – 21) Hayakawa specifically suggests the transmission and reception of ultrasonic beams on a three-dimensional basis to produce an image of a three dimensional area (volumetric region);

'receiving echo signals from the volumetric region (see column 11, lines 15 – 21; Hayakawa specifically suggests the reception of beams, echo signals, on a three-dimensional basis and that it produces an image on a three-dimensional scanning area which corresponds to the volumetric region) and from an invasive medical device located in the region' (see column 6, lines 62 – 67). Hayakawa specifically suggests that the transmit receive unit receives vibrations of the tip of the puncture needle and detects its position in the area; the puncture needle corresponds to the invasive medical device ;

'processing echo signals to produce a wide field of view of the volumetric region' (see column 6, lines 17 – 18). Hayakawa specifically suggests producing an image representative of the whole scanning area; this image corresponds to a wide field of view;

'processing echo signals to produce a detailed view of the portion of the volumetric region in which the invasive medical device is located' (see column 6, lines 19 – 22). Hayakawa specifically suggests producing a second image representative of an enlarged area including the puncture needle. The second image corresponds to the detailed view because it is enlarged, the puncture needle corresponds to the invasive medical device; and

'displaying both the wide field of view of the volumetric region (see figure 8; column 24, lines 63 – 65; Hayakawa specifically suggests displaying images of the whole area) and the detailed view of the portion of the volumetric region in which the invasive medical device is located (see figure 9; column 25, lines 49 – 56; Hayakawa specifically suggests displaying the enlarged image) on an image display (see fig 1, item 707)'

10. Regarding claim 2, Hayakawa discloses 'processing the echo signals to produce a wide field of view comprises processing the echo signals to produce a wide field of view two dimensional image' (see column 6, lines 17 – 18 and column 33, lines 14 - 17). Hayakawa specifically suggests producing an image representative of the whole scanning area and that the generation of the three dimensional image is produced only on the vicinity of the puncture needle making the image representative of the whole scanning area two-dimensional; and

'wherein processing the echo signals to produce a detailed view comprises producing a volume rendering of a portion of the volumetric region' (see column 6, lines

19 – 22 and column 33, lines 14 – 17). Hayakawa specifically suggests producing a second image representative of an enlarged area including the puncture needle and that from this area a three dimensional image is produced.

11. Regarding claim 6, Hayakawa discloses 'volume rendering the echo signals to produce a wide field of view three dimensional image' (see column 32, lines 48 – 60). Hayakawa specifically suggests the generation of a three dimensional image of the scanning area; and

'producing a volume rendering of a portion of the volumetric region' (see column 6, lines 19 – 22 and column 33, lines 14 – 17). Hayakawa specifically suggests producing a second image representative of an enlarged area including the puncture needle and that from this area a three dimensional image is produced.

12. Regarding claim 11, Hayakawa discloses 'wherein displaying further comprises displaying the detailed view of the portion of the volumetric region in an enlarged or zoomed view' (see column 6, lines 19 – 22; figure 9; column 25, lines 49 – 56). Hayakawa specifically suggests producing a second image representative of an enlarged area including the puncture needle and displaying the enlarged image.

13. Regarding claim 12, Hayakawa discloses 'further comprising processing echo signals to produce a time-based display' (see column 18, lines 16 – 33). Hayakawa

specifically suggests generating a video signal based to know the time variations of information as to the reflection of ultrasonic waves; and

'wherein displaying further comprises displaying the time-based display on an image display' (see column 18, lines 34 – 38). Hayakawa specifically suggests displaying a video signal representative of an M-mode image.

14. Regarding claim 13, Hayakawa discloses 'wherein processing echo signals to produce a time-based display further comprises processing echo signals to produce a spectral Doppler display (see column 18, lines 45 – 67 and column 19, lines 1 – 15; Hayakawa specifically suggests generating a color Doppler image on the display), an M-mode display (see column 18, lines 16 – 38; Hayakawa specifically suggests M-mode display), or a color M-mode display' (column 18, lines 39 – 40 and column 29, 1 – 15) . Hayakawa specifically suggests the generation of a color mode image using the M-mode and Doppler images.

15. Regarding claim 14, Hayakawa discloses 'wherein scanning further comprises transmitting a relatively low beam density over a volumetric region, with a relatively high beam density being transmitted in a portion of the volumetric region in which an invasive medical device is located' (see abstract; column 4, lines 17 – 24; column 24, lines 26 - 35). Hayakawa specifically suggests that the area of the passage of the puncture needle is scanned with a higher scanning density than that of the second area; the

second area corresponds to the volumetric region and the area of the passage of the puncture needle corresponds to the region in which a medical device is located.

16. Regarding claim 15, Hayakawa discloses 'processing echo signals received from a low beam density region of the volumetric region; and wherein processing echo signals to produce a detailed view further comprises processing echo signals received from a high beam density region of the volumetric region' (see abstract; column 4, lines 17 – 24; column 24, lines 26 – 35; column 24 lines 63 – 67; column 25, lines 1 - 5). Hayakawa specifically suggests that the area of the passage of the puncture needle is scanned with a higher scanning density than that of the second area; the second area corresponds to the volumetric region and is scanned at a lower density; also the area of the passage of the puncture needle corresponds to the region in which a medical device is located.

17. Regarding claim 16, Hayakawa discloses 'an ultrasonic surgical guidance imaging system which acts to guide the placement or observe the operation of an invasive medical device' (see abstract; column 1, lines 9 – 16). Hayakawa specifically suggests an ultrasonic apparatus for guiding a puncture needle to be introduced into a subject.

'an ultrasonic probe including an array transducer (see column 15, lines 44 – 49; Hayakawa specifically suggests an ultrasonic probe with a plurality of transducers) which steers ultrasonic beams over a volumetric surgical region which includes an

invasive medical device' (see abstract; column 1, lines 9 – 16). Hayakawa specifically suggests an ultrasonic apparatus for guiding a puncture needle to be introduced into a subject;

'a transmit beamformer coupled to the array transducer (see figure 1, item 203 item 209 and item 211; Hayakawa specifically suggests a beamformer attached to the transmit received unit that is connected to the array of transducers) which acts to control the spatial beam density of the beams transmitted by the array transducer in the volumetric region' (see column 4, lines 9 – 24). Hayakawa specifically suggests that the transmit receive unit controls scanning density;

'a receive beamformer coupled to the array transducer (see figure 1, item 203 item 209 and item 211; Hayakawa specifically suggests a beamformer attached to the transmit received unit that is connected to the array of transducers) and responsive to echo signals from array elements for the production of received scanlines in the vicinity of the invasive medical device and in the volumetric region at locations removed from the invasive medical device location' (see column 4, lines 9 – 24). Hayakawa specifically suggests that the transmit receive unit controls scanning density in the area of passage of the puncture needle and another area;

'an image processor (see figure 1, item 500; Hayakawa specifically suggests a display control unit) responsive to the received scanlines for producing a wide field of view of the volumetric surgical region and a detailed view of the invasive medical device (see column 13, lines 55 – 60; column 18, lines 34 – 44). Hayakawa specifically suggests that the display control unit is responsive to the B-mode signal from the scan

converter and the M-mode signal from the scroll scan converter to pass them to the display; and

'a display coupled to the image processor (see figure 1, item 500 and item 707; Hayakawa specifically suggests that the observation TV monitor is coupled to the display control unit) which displays both the wide field of view of the volumetric surgical region and the detailed view of the invasive medical device' (see column 24,–lines 63 - 67; column 25, lines 1 - 5). Hayakawa specifically suggests the display of the first and second areas; the first area corresponding to the detailed view of puncture needle (invasive medical instrument) and the second area corresponds to the low resolution broad area (volumetric surgical region).

18. Regarding claim 17, Hayakawa discloses 'wherein the display is operated to display both the wide field of view of the volumetric surgical region and the detailed view of the invasive medical device in spatial registration' (see column 24,–lines 63 - 67; column 25, lines 1 - 5). Hayakawa specifically suggests the display of the first and second areas; the first area corresponding to the detailed view of puncture needle (invasive medical instrument) and the second area corresponds to the low resolution broad area (volumetric surgical region).

19. Regarding claim 18, Hayakawa discloses 'wherein the transmit beamformer acts to control the spatial beam density of the beams transmitted by the array transducer to be different in the vicinity of the invasive medical device than in the volumetric region at

locations removed from the invasive medical device location' (see column 4, lines 9 – 24; column 16, lines 11 - 39). Hayakawa specifically suggests that the transmit-receive unit along with the beamformer unit controls scanning density in the area of passage of the puncture needle and another area

20. Regarding claim 19, Hayakawa discloses 'wherein the receive beamformer comprises a multiline receive beamformer' (see figure 1, item 203 item 209 and item 211; column 16, lines 7 - 22) Hayakawa specifically suggests a beamformer attached to the transmit-receive unit that is connected to the array of transducers and receives a plurality of signals (multiline).

21. Regarding claim 20, Hayakawa discloses 'wherein the multiline receive beamformer is operated for the production of a different number of received multilines for each transmit beam in the vicinity of the invasive medical device than that produced in the volumetric region at locations removed from the invasive medical device location' (see column 16, lines 23 – 39; Figure 7A, 7B; column 24, lines 16 - 36). Hayakawa specifically suggests different scanning densities for the area including the passage of the puncture needle and the second area (volumetric region) scanned with a lower density.

Claim Rejections - 35 USC § 103

22. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

23. Claims 3 – 5 and 7 - 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hayakawa, U.S. Patent No. 6,221,016 published on Apr 24, 2001 as applied to claim 1 above, and further in view of Strommer et al., U.S. Patent Application Publication No. 2002/0049375, filed on Sep 7, 2001 ("Strommer").

24. Regarding claim 3, Hayakawa discloses 'displaying the wide field of view two dimensional image and the volume rendering' (see column 24,–lines 63 - 67; column 25, lines 1 - 5). Hayakawa specifically suggests the display of the first and second areas; the first area corresponding to the detailed view of puncture needle (invasive medical instrument) and the second area corresponds to the low resolution broad area (volumetric surgical region).

It is noted that Hayakawa does not disclose displaying the images 'in different areas of an image display'. However, within the same field of endeavor, Strommer does disclose displaying the images 'different areas of an image display' (see figure 16B; [0234; [0237]). In figure 16B, Strommer depicts the three dimensional (volume rendering) image (item 732) being displayed beside the two-dimensional image (item 732).

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to incorporate the teachings of Strommer with those of Hayakawa. Both Strommer and Hayakawa are from the same field of endeavor (see Strommer [0030] and Hayakawa Abstract), both are directed to medical imaging and navigation (guiding). Further, by incorporating the teachings of Strommer into those of Hayakawa, users of Hayakawa's invention would be able to not only to track the puncture needle ,they would also be able to see the trajectory in the past and in the future (see Strommer [0233]).

25. Regarding claim 4, Strommer discloses 'designating the spatial location of the volume rendering in the two dimensional image' (see [0269]). Strommer specifically suggests the superposition representation of the surgical tool (the spatial location of the volume rendering of the invasive medical device) on the real time two-dimensional image.

26. Regarding claim 5, Strommer discloses 'displaying the wide field of view two dimensional image and the volume rendering in spatial alignment in a common area of an image display' (see figure 16B; [0234; [0237]). In figure 16B, Strommer depicts the three dimensional (volume rendering) image (item 732) being displayed beside the two-dimensional image (item 732), both images are aligned and in a common area of the display.

27. Regarding claim 7, Hayakawa discloses 'displaying the wide field of view three dimensional image' (see column 32 , lines 48 - 60; Hayakawa specifically suggests displaying the three dimensional scanning area) and the volume rendering of the portion of the volumetric region (see column 24,–lines 63 - 67; column 25, lines 1 – 5; Hayakawa specifically suggests the display of the first and second areas; the first area corresponding to the detailed view of puncture needle area (portion of the volumetric region)).

It is noted that Hayakawa does not specifically suggest displaying 'in different areas of an image display'. However, within the same field of endeavor, Strommer does disclose displaying 'in different areas of an image display' (see figure 16B; [0234; [0237]). In figure 16B, Strommer depicts the three dimensional (volume rendering) image (item 732) being displayed beside the two-dimensional image (item 732)

28. Regarding claim 8, Strommer discloses 'designating the spatial location of the volume rendering of the portion of the volumetric region in the wide field of view three dimensional image' (see [0040]). Strommer specifically suggests superimposing a representation of the surgical tool (designation of the portion of the volume region where the invasive medical device is) on a three dimensional image.

29. Regarding claim 9, Hayakawa discloses 'displaying the wide field of view three dimensional image (see column 32 , lines 48 - 60; Hayakawa specifically suggests displaying the three dimensional scanning area) and the volume rendering of the portion

of the volumetric region (see column 24,–lines 63 - 67; column 25, lines 1 – 5; Hayakawa specifically suggests the display of the first and second areas; the first area corresponding to the detailed view of puncture needle area (portion of the volumetric region).

It is noted that Hayakawa does not specifically suggests displaying 'in spatial alignment in a common area of an image display'. However, within the same field of endeavor, Strommer does disclose displaying 'in spatial alignment in a common area of an image display (see figure 16C). In figure 16B, Strommer depicts an image (item 762) being displayed beside another image (item 764), both images are aligned and in a common area of the display.

30. Regarding claim 10, Hayakawa discloses 'wherein displaying further comprises displaying the volume rendering of the portion of the volumetric region in a separate enlarged or zoomed view' (see figure 9; column 25, lines 49 – 56); Hayakawa specifically suggests displaying the enlarged image representative of the enlarged area (portion of the volumetric region).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PIERRE DIVERSE whose telephone number is (571)270-3911. The examiner can normally be reached on Monday to Thursday 8:00am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jingge Wu can be reached on (571) 272-7429. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Pierre Diversé/
Examiner, Art Unit 2624

/P. D./

/Brian Q Le/
Examiner, Art Unit 2624